

IN THE CLAIMS:

1. (Currently Amended) A substantially purified nucleic acid molecule that encodes a maize or soybean ~~carbon-assimilation-pathway~~ ribulose-bisphosphate carboxylase enzyme or fragment thereof, ~~wherein said maize or soybean carbon-assimilation-pathway enzyme is selected from the group consisting of:~~

- ~~(a) ribulose-bisphosphate carboxylase;~~
- ~~(b) phosphoglycerate kinase;~~
- ~~(c) glyceraldehyde 3-phosphate dehydrogenase;~~
- ~~(d) putative glyceraldehyde 3-phosphate dehydrogenase;~~
- ~~(e) triose phosphate isomerase;~~
- ~~(f) aldolase;~~
- ~~(g) fructose-1,6-bisphosphatase;~~
- ~~(h) transketolase;~~
- ~~(i) putative transketolase;~~
- ~~(j) sedoheptulose 1,7-bisphosphatase;~~
- ~~(k) D-ribulose 5-phosphate 3-epimerase;~~
- ~~(l) ribose 5-phosphate isomerase;~~

~~(m) putative ribose-5-phosphate isomerase;~~

~~(n) ribose-5-phosphate kinase;~~

~~(o) phosphoenolpyruvate carboxylase;~~

~~(p) NADP-dependent malate dehydrogenase;~~

~~(q) aspartate aminotransferase;~~

~~(r) putative aspartate aminotransferase;~~

~~(s) alanine aminotransferase;~~

~~(t) NADP-dependent malic enzyme;~~

~~(u) NAD-dependent malic enzyme;~~

~~(v) PEP carboxykinase;~~

~~(w) putative PEP carboxykinase;~~

~~(x) pyruvate, phosphate dikinase; and~~

~~(y) pyrophosphatase.~~

wherein said nucleic acid molecule comprises the sequence of SEQ ID NO: 5 or
complement thereof.

23. (New) A substantially purified nucleic acid molecule comprising a nucleic acid sequence of SEQ ID NO: 5 or complement thereof.
24. (New) A substantially purified nucleic acid molecule consisting of a nucleic acid sequence of SEQ ID NO: 5 or complement thereof.
25. (New) A substantially purified nucleic acid molecule comprising a nucleic acid sequence having between 100% and 90% sequence identity with a nucleic acid sequence of SEQ ID NO: 5 or complement thereof.
26. (New) The substantially purified nucleic acid molecule of claim 25, wherein said nucleic acid molecule comprises a nucleic acid sequence having between 100% and 95% sequence identity with a nucleic acid sequence of SEQ ID NO: 5 or complement thereof.
27. (New) The substantially purified nucleic acid molecule of claim 26, wherein said nucleic acid molecule comprises a nucleic acid sequence having between 100% and 98% sequence identity with a nucleic acid sequence of SEQ ID NO: 5 or complement thereof.
28. (New) The substantially purified nucleic acid molecule of claim 27, wherein said nucleic acid molecule comprises a nucleic acid sequence having between 100% and 99% sequence identity with a nucleic acid sequence of SEQ ID NO: 5 or complement thereof.